

## **REMARKS**

Claims 1-50 remain pending in the present application. Claims 1-18, 20-23, 25-50 are rejected. Claims 19 and 24 are objected to.

### *Claim Objections*

The Examiner objected to claim 27 as incomplete and not ending by a period. Applicants direct the Examiner to the response to office action filed on July 7, 2009, in which this typographical error was corrected.

### *Claim Rejections – 35 U.S.C. 101*

The Examiner rejected claims 1-15, 38-41, 44-50 under 35 U.S.C. 101 as allegedly being directed to non-statutory subject matter, as not being tied to a specific machine nor does it transform underlying subject matter. Applicants respectfully traverse this rejection.

The Examiner asserts that claims 1-15, 38-41, 44-50 are allegedly “not tied to a specific machine nor does it transform underlying subject matter.” *See* Office Action dated 01/07/09, p.2. Applicants respectfully disagree and further assert that the claims are indeed tied to a specific machine and the claims transform the underlying subject matter.

Firstly, the claims are indeed tied to a specific machine. For example, representative claim 1 calls for “performing a process step upon a batch of workpieces using a processing tool,” which entails the use of a specific type of machine (*i.e.*, a processing tool) and not simply a generic computer. Further claim 1 also calls for “adjusting a metrology routing based upon said correlation,” which entails an apparatus for adjusting the routing of a workpiece for metrology purposes. Thus, the steps of claim 1 involve actual, real-world application and ties to specific apparatus/machine. The Court in *Diamond v. Diehr* clearly indicated that process steps that involve processing of an object (rubber in that case) clearly provide for patentable subject

matter. *Diamond, Commissioner of Patents and Trademarks v. Diehr and Lutton*, 490 U.S. 175 (U.S. 1981). In fact, this Court contrasted processing control to pure algorithm, which merely involves “solving a given type of mathematical problem.” *Id* at 6-7. The claims of the present application are not merely directed to an algorithm that can be employed in a generic machine, but instead, call for processing steps that are tied to a specific machines (e.g., processing tool, device relating to adjusting of metrology routing). The Court in *Bilski* indicated that:

“[a] claimed process is surely patent-eligible under §101 if: (1) it is tied to a particular machine *or* apparatus, or (2) it transforms a particular article into a different state or thing.” *In re Bilski*, 545 F.3d. 943, 1391 (Fed. Cir. 2008).

The steps recited in claim 1 are tied to a processing tool, as well as to apparatus relating to the routing of workpieces. Therefore, the steps called for by claim 1 are indeed tied to “particular machine *or* apparatus,” as provided by *Bilski*. For at least this reason alone, claim 1 calls for patentable subject matter under 35 U.S.C. 101.

Moreover, claim 1 recites patentable subject matter also because the steps recited in claim 1 “transforms a particular article into a different state or thing,” as provided by *Bilski*. In its analysis of *Diamond v. Diehr*, the Court in *Bilski* indicated that the process steps for controlling rubber curing (discussed above) “clearly meet both criteria,” *i.e.*, a processing claim containing steps associated with a real world application satisfies the “tied to a specific machine” test, as well as the “transforms” test. *Bilski* at 1391. The Court indicated that the “process operated on a computerized rubber curing apparatus and transformed raw, uncured rubber into molded, cured rubber products.” *Bilski* at 1391. In a parallel manner, the claims of the present application involve a batch of workpieces that are processed and the routing of the workpieces is adjusted. This also involves transformation of the workpiece (by processing them), as well as

transforming the flow and location of the workpiece using an apparatus capable of routing the workpieces for metrology. Therefore, under the *Bilski* and *Diehr* analyses, claim 1 calls for subject matter that meet both criteria to be of patentable matter: the ties to specific machine or apparatus, and the transformation test.

Further, the Court indicated that electronic transformation of data without transformation of the underlying physical object that the data represented is also patentable as it would not “wholly pre-empt all uses of the principle” (*i.e.*, would not violate the rule against pre-emption of fundamental principles). *Bilski* at 1397. In *Bilski*, the Court indicated that:

“electronic transformation of the data itself into a visual depiction in *Abele* was sufficient; the claim was not required to involve any transformation of the underlying physical object that the data represented. We believe this is faithful to the concern the Supreme Court articulated as the basis for the machine-or-transformation test, namely the prevention of pre-emption of fundamental principles.” *Bilski* at 1397.

As such, claims of the present application are not required to provide physical transformation of the underlying physical object that the data represents. In other words, even without physical transformation of underlying physical object (*e.g.*, workpiece, metrology routing apparatus, etc.) the transformation of the data (*e.g.*, the change in the metrology routing) is sufficient to satisfy the physical transformation requirement of *Bilski*. *Bilski* at 1397. However, as described above, the claims also have the benefit of reciting subject matter that provides for ties to specific machine/apparatus, in addition to satisfying the “transformation” requirement. Therefore, claim 1 is allowable for at least the reasons cited herein.

Further, for at least the reasons cited above, independent method claims 13, 38, and 44 recite subject matter that provides for ties to specific machine/apparatus, in addition to satisfying the “transformation” requirement. Accordingly, independent claims 1, 13, 38, 44, and 46 meet

the requirements of 35 U.S.C. 101 for at least the reasons cited herein, and thus, are patentable. Further dependent claims 2-11, 14-15, 38-41, 45 and 46, which depend from independent claims 1, 13, 38, 44, and 46, respectively, are allowable for at least the reasons cited herein.

*Claim Rejections – 35 U.S.C. 103*

The Examiner maintained the rejection of claims 1-2, 4, 13, 16-18, 20-23. Additionally, the Examiner rejected claims 25-44 and 46-48 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,740,534 (*Adams*) in view of U.S. Patent No. 7,051,250 (*Allen*). Applicants respectfully traverse this rejection.

Applicants respectfully assert that this rejection cannot stand and should be withdrawn since both cited prior art references and prior art under 35 U.S.C. 102(e), and are used in an obviousness rejection under 35 U.S.C. 103(a), which is an impermissible rejection. *See* 35 U.S.C. 103(c)(1); MPEP 706.02(I)(2). Applicants respectfully assert that neither *Adams* nor *Allen* are available as prior under 35 U.S.C. § 103(a). The faces of the patents (*Adams* and *Allen*) clearly indicate that both are 102(e) references and both were assigned to the same entity (Advanced Micro Devices, Inc.) at the time of invention. Claims 1-2, 4, 13, 16-18, 20-23, 25-44 and 46-48 stand rejected under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 6,740,534 (*Adams*), in view of U.S. Patent No. 7,051,250 (*Allen*), both as 102(e) prior art references. The instant application is assigned to Advanced Micro Devices, Inc. At the time of the instant invention, *Adams* and *Allen* were both also assigned to Advanced Micro Devices, Inc. Because the instant application and the cited patent were commonly owned at the time of the invention, Applicants are entitled under 35 U.S.C. § 103(c) to disqualify *Adams* and *Allen* as prior art under 35 U.S.C. § 103(a). As the rejection of claims 1-2, 4, 13, 16-18, 20-23, 25-26, 38-39, 40-

44, 46-48 is thus moot. Applicants respectfully request the rejection of these claims be withdrawn. See 35 U.S.C. 103(c)(1); MPEP 706.02(I)(2).

Further, Applicants assert that *Adams* does not teach, disclose or make obvious elements of the claimed invention that the Examiner claims is made obvious and, further, *Allen* does not make up for the deficit of *Adams*. As acknowledged by the Examiner, *Adams* does not teach a dynamic metrology routing adjustment process based upon tool state analysis. Further, dynamic metrology routing process is not disclosed or made obvious by the prior art. Neither cited prior art discloses correlating tool state analysis to a batch of workpieces and adjusting a metrology routing process based upon the correlation.

The deficit of *Adams* is not made up for by *Allen*. *Allen* is directed to changing the routing of a second workpiece from a first processing tool to a second processing tool based upon first processing tool processing a first workpiece and the system detecting a false condition associated with the first processing tool. In other words, *Allen* is directed to detecting fault relating to a processing tool and then changing the dispatching of a subsequent semiconductor wafer from the first processing tool that contains the fault to a second processing tool. Contrary to the Examiner's assertion, *Allen* does not disclose any subject matter to make obvious the dynamic metrology routing adjustment process called for by claim 1 of the present invention. There is no disclosure in *Allen* relating to any type of a correlation of tool state analysis to a batch of workpiece. Further, *Allen* is not directed to metrology routing based upon any type of a correlation. As mentioned above, *Adams* also does not disclose the dynamic metrology routing of claim 1 of the present invention and is discussed herein. *Allen* also does not disclose subject matter. Therefore, *Adams*, *Allen* or their combination do not make obvious or anticipate the dynamic metrology routing adjustment process called for by claim 1 of the present invention.

Accordingly, claim 1 of the present invention is allowable. As indicated above, *Adams* and *Allen* are not available as prior art, therefore, claim 1 of the present invention is allowable.

Independent claim 13 calls for a fault detection analysis and correlating tool help assessment to batches of workpieces to perform an adjustment of metrology routing. As described above, neither *Adams* nor *Allen* teaches such subject matter and, therefore, claim 13 of the present invention is allowable. Still further, claim 16 calls for means for performing the dynamic metrology data adjustment process described above and is described herein. This subject matter is also not taught, disclosed or suggested by *Adams*, *Allen* or their combination. Still further, claim 17 and 22 calls for a process controller that is capable of performing the dynamic metrology routing adjustment process described above and as described herein, *Adams*, *Allen* or their combination does not make obvious correlating tool state data to a batch of workpieces and adjusting a metrology routing process based upon this correlation. Therefore, claims 17 and 22 of the present invention are allowable for at least the reasons cited herein. Further, claim 26 calls for a computer readable program storage device encoded with instructions that when executed by a computer performs a dynamic metrology routing adjustment process described above. As described herein, *Pasadyne*, *Allen* or their combination do not make obvious or anticipate the correlation of tool state analysis to a batch of workpieces and adjusting a metrology routing based upon the correlation. Therefore, claim 26 of the present invention is also allowable. 1, 13, 17, 22, 26, 38, 42, 44, 46, are also allowable for at least the reasons cited herein.

Further, method claim 38 calls for performing a dynamic metrology data adjustment process that includes correlating tool state analysis to a batch of workpieces in adjusting metrology data routing based upon the correlation, which includes modifying the position of the

batch in a metrology queue. As described above, this correlation and adjustment of metrology routing is not taught, disclosed or suggested, or made obvious, by *Adams, Allen* or their combination. Similarly, independent claim 42 calls for a process controller that is capable of performing the correlation of tool state analysis to the workpieces and adjusting metrology routing process and therefore, for at least the reasons cited above, is not taught, disclosed or made obvious by *Adams, Allen* or their combination. Still further, independent claims 44 and 46 calls for adjusting the metrology routing based upon correlation of tool state data and for at least the reasons cited above, are not taught, disclosed or made obvious by *Adams, Allen* or their combination.

Accordingly, independent claims 1, 13, 16, 17, 22, 26, 38, 42, 44, and 46 are allowable for at least the reasons cited herein. Further, claims 2-12, 14-15, 18-21, 23-25, and 27-37, 39-41, 43, 45, 47-50 which respectively depend from claims 1, 13, 17, 22, 26, 38, 42, 44, 46, are also allowable for at least the reasons cited herein.

*Allowable Subject Matter*

Applicants acknowledge and appreciate that the Examiner has indicated that claims 19 and 24 contain allowable subject matter. Further, in light of the above-presented arguments, all remaining pending claims are also allowable.

In light of the arguments presented herein, all independent claims of the present invention are allowable and, therefore, claims 1-50 of the present invention are allowable for at least the reasons cited herein.

Reconsideration of the present application is respectfully requested.

In light of the arguments presented above, a Notice of Allowance is respectfully solicited.

If for any reason the Examiner finds the application other than in condition for allowance, **the Examiner is requested to call the undersigned attorney** at the Houston, Texas telephone number (713) 934-4069 to discuss the steps necessary for placing the application in condition for allowance.

Respectfully submitted,

WILLIAMS, MORGAN & AMERSON, P.C.  
CUSTOMER NO. 23720

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By:           /Jaison C. John/            
Jaison C. John, Reg. No. 50,737  
10333 Richmond, Suite 1100  
Houston, Texas 77042  
(713) 934-4069  
(713) 934-7011 (facsimile)  
ATTORNEY FOR APPLICANT(S)